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to machinery. In the future cooperative ownership and operation, especially in the new settlement areas, should be encouraged as one of the best means of extending the use of machinery on a practicable and economical basis. The experience of the Dujaila cooperative, which, owing to low overhead and transport costs, rents machinery to its members at rates lower than those of the AMA and yet is apparently able to cover the cost of depreciation, seems promising in this respect.

Lack of repair facilities and spare parts have greatly handicapped mechanization. The government is seeking to overcome this difficulty both by establishing its own repair shops and by requiring importers to provide repair facilities and maintain minimum stocks of spare parts. Such centrally located shops will be available, however, only for major repairs. Since local repair facilities are now almost wholly lacking, steps should also be taken to establish a considerable number of small shops equipped to undertake minor repairs. In addition, courses designed to train drivers in elementary maintenance are urgently needed. The cost of mechanization will remain discouragingly high unless the life of machinery is prolonged by more adequate maintenance and repair.

3. Soil-building and Forage Crops: Fertilizers

The cultivation of soil-building and forage crops is virtually unknown even though the fertility of the soil needs to be replenished and an improvement in feed supply would make the greatest single contribution to an increase in the low productivity of livestock. In the irrigation zone berseem clover, sown in the grain stubble in late summer, would provide a particularly good pasture, soiling and hay crop. In the rain-fed region winter oats and vetch, when cut and cured, would provide a good reserve feed. In the irrigation zone quick-growing crops such as millet could be grown for summer pasture; and more corn, sorghum and legumes such as cowpeas and mungo beans should be cultivated.

Little fertilizer is used and animal manure is generally collected and dried for use as fuel. With the expanding cultivation of crops such as cotton, the use of fertilizer is becoming more urgent. There is need for soil analysis and extensive experimentation to ascertain the fertilizer requirement and the effect of fertilizer on

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Breweries

274 Iraq's only brewery, having a capacity of 50 barrels per day, is not adequate to meet market demands. The owners are therefore in the process of obtaining additional equipment to double the plant's output. The brewery, which has been in operation since 1945, is very modern in design and its product is of excellent quality.

Distillery

Iraq's only source of ethyl alcohol is a small, modern, well-designed distillery located in Baghdad. Surplus dates are used as raw material. Although they are not expensive, they are nevertheless more costly than the raw materials, such as molasses, which are used in the alcohol industry in other countries. Thus the distillery is operating at about one third capacity, since the market will not absorb its entire production at the prices it charges. Most of the current output is used in the making of the national alcoholic drink known as *arak*.

258 ***Date Packing***

Date packing is probably one of the oldest industries in the country. Market requirements have kept the industry very modern and fully capable of meeting all demands on it.

Matches

372 There are two match manufacturing companies in Iraq, both producing matches of very good quality. One company utilizes paper, and the other wood. Their combined production is equivalent to about one half of Iraq's requirements.

Cigarettes

277 The bulk of Iraq's requirements of cigarettes are made in the country from home grown tobacco. The output of 12 factories in 1949 amounted to 2.25 billion cigarettes, but there were in addition many small producers of handmade cigarettes. Even in the factories much of the work is done by hand, but further mechanization cannot be expected until labor becomes more expensive.

Small Enterprises

433 There are many small enterprises in Iraq which could be
445 expanded, such as tire retreading, reclaiming of lube oil, wood-

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working shops, battery and electrical repair work, shops for repair of automotive and agricultural equipment, bakeries, confectioneries and food processing establishments of various kinds. The amount of capital required in individual cases is quite small but, in the aggregate, it adds up to a considerable sum. The Industrial Bank should arrange for a small-enterprise section to make surveys of small industries in each community, advise them concerning ways of improving their methods of production and assist in getting proper financial help where it is justified. It is estimated that ID 400,000 would be sufficient to meet the needs of these industries over the next five years.

The assistance of small industries by the Industrial Bank is to be preferred to assistance or stimulation of so-called cottage industries. Cottage industries may be of benefit in the over-populated areas of Asia, but for Iraq they do not appear to be an appropriate solution to industrial growth. Iraq's population is small in relation to the resources available. Over the long term its problem is not primarily one of creating a maximum number of jobs with a minimum of capital but rather one of utilizing capital resources in ways which will make a permanent addition to the productive capacity of the country and to the building of modern industrial enterprises.

Establishment of New Industries

The entrance of industry into new fields would help to balance the over-all development of the country and to utilize its resources more fully. At the same time it would increase employment and thereby aid in raising the general standard of living.

Nitrate Fertilizer, Sulphur and Cement Plant

The largest and perhaps most promising possibility for new industrial development lies in the utilization of the natural gas produced in conjunction with oil. Upon completion of the 30-inch pipeline, oil production at the Kirkuk field will be at a rate which will make more than 25 billion cu. ft. of gas available per year. For the most part, this gas will be wasted until some means is found for its economic utilization. This gas contains, according